IN THE CLAIMS

1. (Currently Amended) A ~~computer-implemented~~ method of optimizing a size of coded data blocks intended to be subjected to an iterative decoding process, wherein a maximum acceptable error rate of the iterative decoding process is fixed in advance, comprising:

receiving, at a receiver, coded data sent by a transmitter; and

determining, prior to performing the decoding process, but after receiving the received coded data, and based on the maximum acceptable error rate, (1) a submultiple block size among a plurality of integer block sizes N/k, which are submultiples of an integer block size N by an integer factor k greater than or equal to 1, wherein k is a factor of N; and (2) a maximum number of iterations among a plurality of integers corresponding to a maximum number of iterations to be applied by the iterative decoding process on a coded data block of the submultiple block size, such that a mean number of iterations that will be applied by the iterative decoding process on the submultiple block size is minimized.

2. (Previously Presented) The optimization method according to Claim 1, wherein the mean number of iterations is determined as a function of a signal-to-noise ratio as the mean value of the number of iterations that will be applied by the iterative decoding process for each block in a succession of blocks of said submultiple size, the iterations being stopped (1) if the block of said submultiple size satisfies a predetermined reliability criterion, or (2) if the number of iterations for the block attains the given maximum number of iterations.

3. (Previously Presented) The optimization method according to Claim 1, wherein mean numbers of iterations for different submultiple sizes, different maximum numbers of iterations, and different signal-to-noise ratios are stored in a table.

4. (Previously Presented) The optimization method according to Claim 3, wherein the table is updated based on results of the iterative decoding process.

5. (Previously Presented) The optimization method according to Claim 3, wherein the mean numbers of iterations are obtained by interpolation from values available in the table.

6. (Previously Presented) The optimization method according to claim 1, wherein the determining step comprises:

determining the integer factor k among integers that have a value higher than a predetermined value k_{min}.

7. (Previously Presented) The optimization method according to claim 1, wherein the determining step comprises:

determining the maximum number of iterations compatible with a predetermined maximum decoding time, wherein a search among said plurality of submultiple block sizes N/k and said plurality of integers is limited to values such that the mean number of iterations that will be applied by the iterative decoding process on a block of said submultiple size is less than said maximum number of iterations.

8. (Previously Presented) The method of claim 1, further comprising:

partitioning the coded data of a block of initial size as a sequence of sub-blocks of the submultiple block size; and

decoding the sub-blocks, one by one, by a succession of iterations of the iterative decoding process, the iterations being stopped for one of the sequence of sub-blocks if (1) a predetermined reliability criterion is satisfied, or (2) if the number of iterations attains the maximum number of iterations associated with the submultiple block size.

9. (Previously Presented) The method of Claim 1, further comprising:

partitioning the coded data of a block of initial size as a sequence of sub-blocks of the submultiple block size; and

decoding the sub-blocks by successively applying, on each sub-block, an iteration of the iterative decoding process, the iteration not being applied for a sub-block (1) if a predetermined reliability criterion is satisfied, or (2) if the number of iterations reaches the maximum number of iterations associated with the submultiple block size.

10. (Currently Amended) A device for an iterative decoding of blocks of data coded by a turbocoder, comprising:

~~means for determining~~ a processor configured to determine, prior to performing a decoding process, but after receiving coded data, and based on a maximum acceptable error rate, (1) a submultiple block size among a plurality of integer block sizes N/k, which are submultiples of an integer block size N by an integer factor k greater than or equal to 1, wherein k is a factor of N; and (2) a maximum number of iterations among a plurality of integers corresponding to a maximum number of iterations to be applied by the iterative decoding process on a coded data block of the submultiple block size, such that a mean number of iterations that will be applied by the iterative decoding process on the submultiple block size is minimized; and

means for transmitting the optimum block size to the turbocoder.

11. (Currently Amended) A coding/decoding system, comprising:

a turbocoder configured to code blocks of data; and

an iterative decoding device ~~according to Claim 10~~ configured to decode the blocks of data coded by the turbocoder, the iterative coding device ~~further~~ comprising:

a processor configured to determine, prior to performing a decoding process, but after receiving coded data, and based on a maximum acceptable error rate, (1) a submultiple block size among a plurality of integer block sizes N/k, which are submultiples of an integer block size N by an integer factor k greater than or equal to 1, wherein k is a factor of N; and (2) a maximum number of iterations among a plurality of integers corresponding to a maximum number of iterations to be applied by the iterative decoding process on a coded data block of the submultiple block size, such that a mean number of iterations that will be applied by the iterative decoding process on the submultiple block size is minimized; and

means for transmitting the optimum block size to the turbocoder;

means for receiving the optimum block size and for modifying the size of at least one internal interleaver according to the received optimum block size.

12. (Currently Amended) A turbocoding device for coding blocks of data, comprising:

~~means for determining~~ a processor configured to determine, prior to performing a decoding process and based on a maximum acceptable error rate, (1) a submultiple block size among a plurality of integer block sizes N/k, which are submultiples of an integer block size N by an integer factor k greater than or equal to 1, wherein k is a factor of N; and (2) a maximum number of iterations among a plurality of integers corresponding to a maximum number of iterations to be applied by the iterative decoding process on a coded data block,

such that a mean number of iterations that will be applied by the iterative decoding process on the submultiple block size is minimized; and

means for adaptively modifying the size of the coded data blocks according to said optimum block size.

13. (Currently Amended) A device for turboequalisation of blocks of data coded by a coder and modulated, comprising:

~~means for determining~~ a processor configured to determine, prior to performing a decoding process, but after receiving coded data, and based on a maximum acceptable error rate, (1) a submultiple block size among a plurality of integer block sizes N/k, which are submultiples of an integer block size N by an integer factor k greater than or equal to 1, wherein k is a factor of N; and (2) a maximum number of iterations among a plurality of integers corresponding to a maximum number of iterations to be applied by the iterative decoding process on a coded data block, such that a mean number of iterations that will be applied by the iterative decoding process on the submultiple block size is minimized; and

means for transmitting the optimum block size to the coder.